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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/825,089

Applicant(s)

CHAU ET AL.

ExaminerMUTHUSWAMY G.
MANOHARAN**Art Unit**

2617

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 March 2008.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-18 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 2, 3, 8, 9, 11, 13 and 18 are rejected under 35 U.S.C. as being unpatentable over Averbuch et al. (hereinafter Averbuch) (US 5867785) in view of DeTorbal (US 2004/0058678).

Regarding **claim 1**, Averbuch teaches a method of managing communications associated with a plurality of wireless devices (Col. 4, lines 30-31), comprising:

- detecting a first access point (stationary base site 109 in Figure 1; Col. 4, lines 8-45);
- associating a station of a wireless switch (combinations of items 206 and 200 in Figure 2) with said first access point;
- routing data between said plurality of wireless devices (Col. 4, lines 19-31; Figure 2) and
- said first access point using said first station, detecting a second access point (item 109 in Figure 1; Col. 8, lines 8-11);
- associating a station of said wireless switch with said second access point (item 110 in Figure 1; Col. 8, lines 8-11);
- monitoring signal strengths of said first and second access points as received by said first and second stations (Col. 5, lines 57-67; Col. 6, lines 1-9); and
- switching to routing data between said plurality of wireless devices and said second access point using said second station in response to said monitoring (Col. 8, lines 8-35).

Averbuch did not teach expressly first and second station of a wireless switch. However, DeTorbal teaches in an analogous art, first and second station of a wireless switch (item 22, first station 24 and second station 26 in Figure 2; Paragraph [0021], lines 1-4). Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to use first and second station of a wireless switch in order to initiate early handover operations for a group of active mobile connections. This modification helps in

improving the likelihood of successful handovers with no dropped calls is increased for mobile radios moving at a high speed and /or together as a group. This is because **the first station of the wireless switch can detect the target base station and also the available resources well in advance.**

Regarding **claim 2**, Averbuch teaches the method of claim 1 further comprising: associating said plurality of wireless devices (Col. 4, lines 30-31) with an access point of a wireless switch (items 202, 203,204 and 205 in Figure 2; Col. 4, lines 19-31).

Regarding **claim 3**, Averbuch teaches all the particulars of the claim except wherein said monitoring comprises: applying a filtering function to received signal strengths. However, DeTorbal teaches in an analogous art, wherein said monitoring comprises: applying a filtering function to received signal strengths (Figure 3; Paragraphs 0033-0034). Therefore, it would be obvious to one of ordinary skill in the art the time of invention to use the method except wherein said monitoring comprises: applying a filtering function to received signal strengths. This modification helps in successfully perform handover and thus improving the performance and reliability.

Regarding **claim 8**, Averbuch teaches the method of claim 1, wherein said wireless switch is disposed within a transportation vehicle (Figure 2; Abstract, lines 3-4).

Regarding **claim 9**, Averbuch teaches a wireless switch system (combinations of items 202,203,204, 206 and 200 in Figure 2) for managing communications of a plurality of wireless devices (Col. 4, lines 30-31; items 207,208 ... 213 in Figure 2), comprising:
an internal access point for managing a wireless local area network (WLAN) that includes said plurality of wireless devices (202,203,204 and 205 in Figure 2);

a station (item 206, integrated into a single station; Col. 4, lines 1-14) for communicating with external access points (items 140.... 171 in Figure 2), and

a packet switch controller ("mobile system controller", item 200 in Figure 2; Col. 4, lines 19-21) for routing data between said plurality of wireless devices and external access points using said plurality of stations, wherein said packet switch controller is operable to switch communications between said plurality of stations in response to signal strengths received from said plurality of access points crossing threshold values (Col. 5, lines 57-67; Col. 6, lines 1-9).

Averbuch did not teach expressly plurality of stations for communicating with external access points. However, DeTorbal teaches in an analogous art, plurality of stations communicating with external access points (item 22, first station 24 and second station 26 in Figure 2; Paragraph [0021], lines 1-4). Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to use plurality of stations communicating with external access points in order to initiate an early handover operation for a group of active mobile connections. This modification helps in improving the likelihood of successful handovers with no dropped calls is increased for mobile radios moving at a high speed and /or together as a group. This is because the first station of the wireless switch can **detect the target base station and also the available resources well in advance.** 1

Claim 11 is rejected for the same reason as set forth in claim 3.

Regarding **claim 13**, Averbuch teaches a wireless system, comprising:

a plurality of access points (items 202,203 .. 205 in Figure 2), and

a wireless switch comprising: a station for communicating with said plurality of access points (Figure 2), an internal access point (any one of items 202,203,204,205 in Figure 2) for managing communication with a plurality of wireless devices (Figure 2); and a packet switch controller (item 200 in Figure 2) for directing data between said plurality of stations and said plurality of wireless devices, wherein said packet switch controller switches between said plurality of stations in response to signal strengths received from said plurality of access points (Col. 5, lines 56-67; Col. 6, lines 1-9).

Averbuch did not teach expressly plurality of stations for communicating with external access points. However, DeTorbal teaches in an analogous art, plurality of stations communicating with external access points (item 22,24 and 26 in Figure 2 ; Paragraph [0021], lines 1-4). Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to use plurality of stations communicating with external access points in order to initiate early handover operations for a group of active mobile connections.

Regarding **claim 18**, Averbuch further teaches the wireless system of claim 13 wherein said wireless switch is mounted to a transportation vehicle (Figure 2; Abstract, lines 3-4).

Claims 4, 10 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Averbuch et al. (hereinafter Averbuch) (US 5867785) in view of DeTorbal (US 2004/0058678) and further in view of Averbach (hereinafter Averbuch-2) (US 5268933).

Regarding **claim 4**, Averbuch in view of DeTorbal teaches all the particulars of the claim except maintaining a connection with said second access point by communicating ping packets through said second access point. However, Averbuch-2 teaches in an analogous art, maintaining a connection with said second access point by communicating ping packets through said second access point (Col. 3, lines 1-44). Therefore, it would be obvious to one of ordinary skill in the art the time of invention to maintain a connection with said second access point by communicating ping packets through said second access point. This modification helps in speeding up the synchronization process and thus speeding up the handover process.

Regarding **claims 10 and 17**, Averbuch teaches all the particulars of the claim except 13 wherein said packet switch controller maintains a connection with one of said plurality of access points that is not currently used for data communications by routing ping packets through said one of said plurality of access points. However, Averbuch-2 teaches in an analogous art, wherein said packet switch controller maintains a connection with one of said plurality of access points that is not currently used for data communications by routing ping packets through said one of said plurality of access points (Col. 3, lines 1-44). Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to use wireless system, wherein said packet switch controller maintains a connection with one of said plurality of access points that is not currently used for data communications by routing ping packets through said one of said plurality of access points. This modification helps in speeding up the synchronization process and thus speeding up the handover process.

Claims 5, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Averbuch et al. (hereinafter Averbuch) (US 5867785) in view of DeTorbal (US 2004/0058678) and further in view of Noll et al. (hereinafter Noll) (US 2003/0153316).

Regarding **claim 5**, Averbuch teaches said plurality of wireless devices and said wireless switch are moving in a common direction (Figure 2; Col. 8, lines 42-43), the method further comprising: operating a base station associated with said first access point by tracking movement of said plurality of wireless devices (Col. 4, lines 4-5). DeTorbal teaches directional antenna (item 24 in Figure 2). Neither Averbuch nor De Torbal teaches a base station associated with a first access point with a directional antenna. However, Noll teaches in an analogous art, a base station with a directional antenna ("directional antenna", Paragraph [0018], lines 7-8). Therefore, it would be obvious to one of ordinary skill in the art the time of invention to use a directional antenna for a base station associated with a first access point. This modification improves the communication efficiency.

Regarding **claim 6**, Averbuch in view DeTorbal teaches all the particulars of the claim except monitoring received signal strengths associated with respective patterns of antenna elements of said directional antenna; and switching between said patterns in response to monitoring received signal strengths associated with the respective patterns. However, Noll teaches in an analogous art, monitoring received signal strengths associated with respective patterns of antenna elements of said directional

antenna; and switching between said patterns in response to monitoring received signal strengths (paragraph [0018], lines 1-15). Therefore, it would be obvious to one of ordinary skill in the art the time of invention to use the method of monitoring received signal strengths associated with respective patterns of antenna elements of said directional antenna; and switching between said patterns in response to monitoring received signal strengths. This modification improves the communication efficiency.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Averbuch et al. (hereinafter Averbuch) (US 5867785) in view of DeTorbal (US 2004/0058678) and further in view of Gresham et al (hereinafter Gresham) (US 2002/0160773).

Regarding **claim 7**, Averbuch in view of DeTorbal teaches all the particulars of the claim except wherein the packets from the first access point that are associated with transmission control protocol (TCP) sessions. However, Gresham teaches in an analogous art, the wireless switch system wherein the packets from the first access point that are associated with transmission control protocol (TCP) sessions (Paragraph [0099], line 19). Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to use wireless system, wherein the packets from the first access point that are associated with transmission control protocol (TCP) sessions. This modification helps in accessing Internet through mobile devices.

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Averbuch et al. (hereinafter Averbuch) (US 5867785) in view of DeTorbal (US 2004/0058678) and further in view of Ohyama et al. (hereinafter Ohyama) (US 6243575).

Regarding **claim 12**, Averbuch in view of DeTorbal teaches all the particulars of the claim except wherein when said packet switch controller switches communications between a first station to a second station, said switch controller distributes remaining packets received by said first station to said plurality of wireless devices and send acknowledgement packets through said second station. However, Ohyama discloses in an analogous art, wherein when said packet switch controller switches communications between a first station to a second station, said switch controller distributes remaining packets received by said first station to said plurality of wireless devices and send acknowledgement packets through said second station (Col. 5, lines 12-33; Figure 4; Col. 13, lines 40-63). Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to use wireless system, wherein when said packet switch controller switches communications between a first station to a second station, said switch controller distributes remaining packets received by said first station to said plurality of wireless devices and send acknowledgement packets through said second station. This modification prevents the second access points from sending duplicate packets.

Claims 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Averbuch et al. (hereinafter Averbuch) (US 5867785) in view of DeTorbal (US

2004/0058678) and further in view of Noll et al. (hereinafter Noll) (US 2003/0153316).

Regarding **claim 14**, Averbuch in view of DeTorbal ("directional antenna" item 24 in Figure 1) teaches all the particulars of the claim except a base station with a directional antenna. However, Noll teaches in an analogous art, directional antenna ("directional antenna", Paragraph [0018], lines 7-8). Therefore, it would be obvious to one of ordinary skill in the art the time of invention to use directional antenna. This modification improves the communication efficiency. Averbuch did teach "iDEN Enhanced Base Transceiver Site" by Motorola which includes sector antenna (directional antenna).

Regarding **claim 15**, Averbuch in view of Park and further in view of Noll teaches all the particulars of the claim 14. However, Averbuch did not teach expressly monitoring signal strengths received from said wireless switch by a plurality of patterns of discrete antenna elements of said directional antenna. Moreover, Noll teaches in an analogous art, monitoring signal strengths received from said wireless switch by a plurality of patterns of discrete antenna elements of said directional antenna (paragraph [0018], lines 1-15). Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to monitor signal strengths received from said wireless switch by a plurality of patterns of discrete antenna elements of said directional antenna. This modification improves the communication efficiency.

Regarding **claim 16**, Averbuch in view of Park and further in view of Noll teaches all the particulars of the claim 15. However, Averbuch did not teach expressly wherein

said controller of said base station switches between said plurality of patterns in response to said monitoring. Moreover, Noll teaches in an analogous art, wherein said controller of said base station switches between said plurality of patterns in response to said monitoring (paragraph [0018], lines 1-15). Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to use the wireless system wherein said controller of said base station switches between said plurality of patterns in response to said monitoring.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MUTHUSWAMY G. MANOHARAN whose telephone number is (571)272-5515. The examiner can normally be reached on 7:00AM-2:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eng George can be reached on 571-272-7495. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2617

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/George Eng/
Supervisory Patent Examiner, Art Unit 2617